INTRODUCTION

The Beginning of an Idea

One of the most enduring legends of Yellowstone National Park involves its beginning. In 1870, explorers gathered around a campfire at the junction of two pristine rivers, overshadowed by the towering cliffs of the Madison Plateau. They discussed what they had seen during their exploration and realized that this land of fire and ice and wild animals needed to be preserved. Thus, the legend goes, the idea of Yellowstone National Park was born.

It is a wonderful story—and a myth. But those men were real, and so is this land they explored. Thanks to their reports and the work of explorers and artists who followed, the United States Congress established Yellowstone National Park in 1872. The Yellowstone National Park Protection Act says "the headwaters of the Yellowstone River . . . is hereby reserved and withdrawn from settlement, occupancy, or sale . . . and dedicated and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people." In an era of expansion throughout the young nation, the federal government had the foresight to set aside land deemed too valuable to develop.

For the following 18 years, Yellowstone was "the national park." Then in 1890 Congress established three more national parks: Sequoia, General Grant (now part of Kings Canyon), and Yosemite. Mount Rainier followed in 1899. In 1906, Congress passed the Antiquities Act, which gave the president authority to establish national monuments. By 1914, the United States had 30 national parks and monuments, each managed separately and administered by three different federal departments—Interior, Agriculture, and War. No unified policy or plan provided for the protection, administration, and development of these parks and monuments.

The management of Yellowstone from 1872 through the early 1900s, which is described in Chapter 1, helped set the stage for the creation of an agency whose sole purpose was to manage the national parks. Promoters of this idea gathered support from influential journalists, railroads likely to profit from increased park tourism, and members of Congress. The National Park Service Organic Act was passed by Congress and approved by President Woodrow Wilson on August 25, 1916:

> There is created in the Department of the Interior a service to be called the National Park Service, [which] . . . shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measures as conform to the fundamental purpose to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

TWO "ORGANIC ACTS"

The laws creating Yellowstone National Park and the National Park Service are both called "The Organic Act" because each was significant enabling legislation. However, the name most often refers to the law that created the National Park Service. To avoid confusion, in this book we will refer to the laws by their names as listed in the U.S. Code Table of Popular Names: The Yellowstone National Park Protection Act and The National Park Service Organic Act.

Today's National Park System

The National Park Service (NPS) manages approximately 83 million acres in 49 states, the Virgin Islands, Puerto Rico, Guam, and American Samoa. Delaware is the only state without an NPS unit.

- **National parks** are the oldest, most well known part of the system and are usually areas of spectacular natural scenery relatively untouched by human development. National parks are established by acts of Congress.
- **National monuments** are areas of historic or scientific interest established by presidential proclamation.
- **National historical parks and national historic sites** are both set aside to commemorate some facet of the history of the people of those areas.
- Many **national memorials** fit the description for national historical parks or sites, but some of these are also set aside because of important historical issues not specifically linked to the site of the memorial, such as Mt. Rushmore and Vietnam Veterans.

Most other types of National Park System units are well defined by their titles.

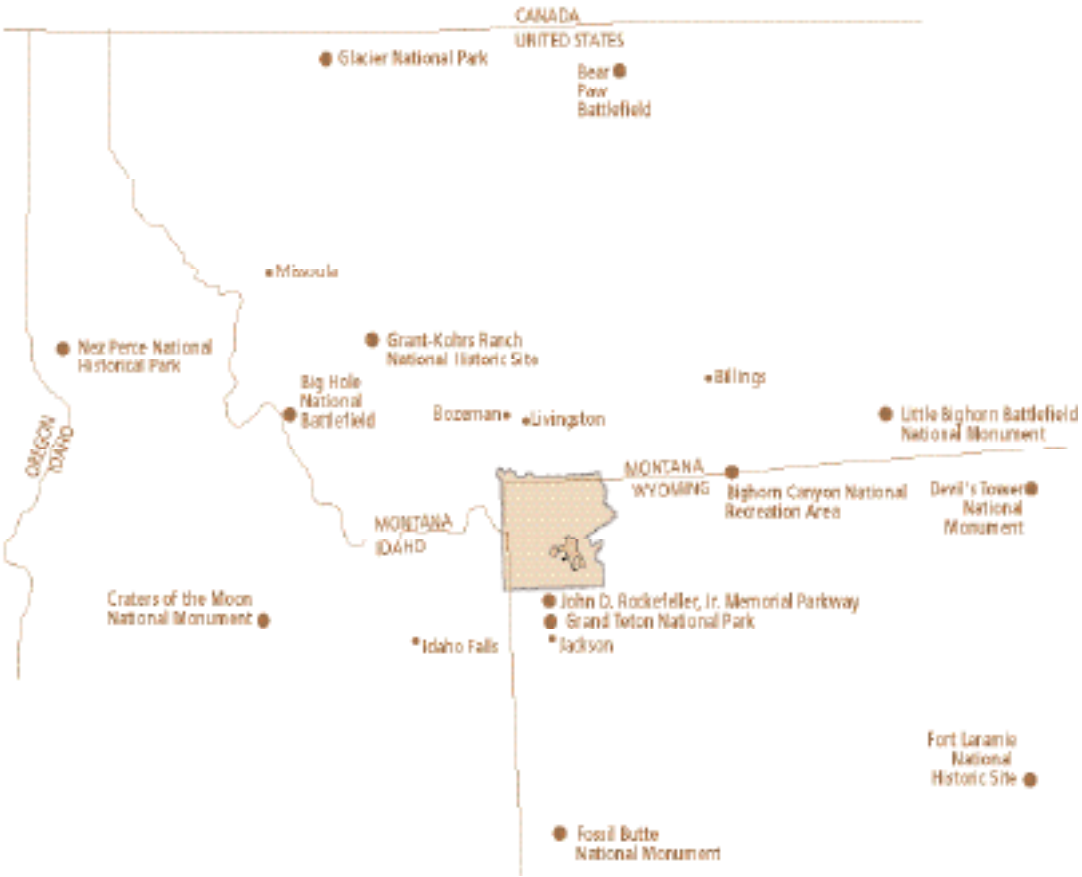
Units in the National Park System

Total, as of March 2007: 390

1 International historic site
3 Natl. battlefield parks
1 Natl. battlefield site
11 Natl. battlefields
42 Natl. historical parks
78 Natl. historic sites
4 Natl. lakeshores
28 Natl. memorials
9 Natl. military parks
74 Natl. monuments
58 Natl. parks
4 Natl. parkways
18 Natl. preserves
18 Natl. recreation areas
2 Natl. reserves
5 Natl. rivers
3 Natl. scenic trails
10 Natl. seashores
10 Natl. wild & scenic rivers and riverways
11 Sites without designation

For a detailed list of NPS units, visit www.nps.gov/pub_aff/refdesk/index.html

National Park Units Near Yellowstone



Mission Statement of the National Park Service

The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

Implementing the NPS Mission

System-wide

The NPS Mission Statement expresses the dual responsibility of preserving parks in their natural state (or, at historical areas, to preserve a scene as nearly as it appeared on a certain date), and making these areas accessible for public use and enjoyment. These two fundamental goals can be incompatible and present difficult choices; two policies provide some direction:

- **Natural resources** (plants, animals, water, air, soils, topographic features, paleontologic resources, and esthetic values such as scenic vistas, natural quiet, and clear night skies) are managed to maintain, rehabilitate, and perpetuate their inherent integrity. Native species that have been exterminated should be reintroduced and exotic species eliminated, if possible. Livestock grazing, hunting, and resource extraction are prohibited in National Park System areas, with a few exceptions.
- **Cultural resources** (prehistoric and historic structures and resources, landscapes, archeologic resources, ethnographic resources, and museum collections) are preserved.

Individual Parks

To implement these policies, each park unit prepares a General Management Plan/Master Plan that outlines management zones. In Yellowstone:

- **Natural zones** (most of Yellowstone National Park) protect natural resources and values. All components and processes of park ecosystems, including the natural abundance, diversity, and ecological integrity of the plants and animals, should be maintained. Change is recognized as an integral part of functioning natural systems, and interference is allowed only under special circumstances such as emergencies when human life and property are at stake.
- **Cultural or historic zones,** such as Fort Yellowstone, preserve cultural resources. Where compatible with cultural resource objectives, the policies for natural zones will be followed. Any action that will adversely affect cultural resources will be undertaken only if there is no reasonable alternative, and all reasonable measures to limit adverse effects will be taken, including recovery of data and salvage of materials.
- **Development zones,** such the Old Faithful area, allow for visitor use. Roads, walks, buildings, and other visitor and management facilities may occupy much of the zone and the natural aspect of the land may be altered. However, if a park manager determines that a resource is or would become impaired by public use or development, the manager may limit public use or close a specific area.

International Leadership

The National Park Service example has inspired countries around the world to establish more than 100 national parks—modeled in whole or part on Yellowstone National Park and the National Park Service idea.

Additionally, NPS lends its experienced staff to other countries to evaluate park proposals, management plans, and resource issues.

Yellowstone's Leadership Role

Staff of Yellowstone National Park travel the world to share their expertise. For example:

- the Chief of Interpretation participated in training Chinese officials in the role of education in national parks.
- the former Director of Yellowstone Center for Resources trained park personnel throughout Africa on bioprospecting and benefits-sharing *(see Chapter 9).*
- staff scientists collaborate with scientists in Russia to conduct research on brucellosis *(see Chapter 9).*

As the first national park, Yellowstone also continues to be a leader in developing and implementing policies in the National Park Service, such as the benefits-sharing policies mentioned above and described in Chapter 9.

Mission Statement of Yellowstone National Park

Preserved within Yellowstone National Park are Old Faithful and the majority of the world's geysers and hot springs. An outstanding mountain wildland with clean water and air, Yellowstone is home of the grizzly bear and wolf and free-ranging herds of bison and elk. Centuries-old sites and historic buildings that reflect the unique heritage of America's first national park are also protected. Yellowstone National Park serves as a model and inspiration for national parks throughout the world. The National Park Service preserves, unimpaired, these and other natural and cultural resources and values for the enjoyment, education, and inspiration of this and future generations.

Purpose Statement

Yellowstone, the world's first national park:

- preserves geologic wonders, including the world's most extraordinary collection of geysers and hot springs and the underlying volcanic activity that sustains them;
- preserves abundant and diverse wildlife in one of the largest remaining intact wild ecosystems on Earth, supporting unparalleled biodiversity;
- preserves an 11,000-year-old continuum of human history, including the sites, structures, and events that reflect our shared heritage; and
- provides for the benefit, enjoyment, education, and inspiration of this and future generations.

Significance of Yellowstone National Park

- International symbol of natural preservation.
- A Biosphere Reserve and a World Heritage Site *(see page 13).*
- Contains approximately half of the world's hydrothermal features—more than 10,000—including the world's largest concentration of geysers—more than 300.
- Home of the world's tallest active geyser, Steamboat, which erupts to more than 300 feet.
- One of the few places in the world with active travertine terraces.
- Hydrothermal features are habitats for microbes that are providing links to primal life, origins of life, and astrobiology; plus they are proving useful in solving some of our most perplexing medical and environmental problems *(see Chapter 9).*
- With the restoration of the gray wolf in 1995, the park now contains all the large mammal species known to be present when European Americans first arrived.
- Protects the gray wolf (federally listed as endangered and designated experimental and non-essential in Yellowstone National Park) and three threatened species—the grizzly bear, the bald eagle, and the lynx.
- Home to one of the largest concentrations of elk in the world. (Rocky Mountain National Park also has a large concentration of elk.)
- Only place in the U.S. where bison have existed in the wild since primitive times. The early legislation that protected these bison, the Lacey Act of 1894, was a precursor to the Endangered Species Act.
- Site of one of the largest volcanic eruptions in the world, which left behind one of the largest calderas. *(See Chapter 3.)*
- Site of the spectacular Grand Canyon of the Yellowstone River. *(See Chapter 10.)*
- Location of largest lake above 7,000 feet in North America—Yellowstone Lake. *(See Chapter 10.)*
- Source of two great North American rivers: two of the three forks of the Missouri River, and the Snake, which is part of the Columbia River system. The Yellowstone River, which begins just south of the park, is the longest free-flowing river in the U.S.

GEOLOGY

An active volcano

1,000–3,000 earthquakes annually

More than 10,000 hydrothermal features

More than 300 geysers

One of the world's largest calderas, measuring 45 x 30 miles

Approximately 290 waterfalls, 15 ft. or higher, flowing year-round

Tallest waterfall in the front country: Lower Falls of the Yellowstone River at 308 ft.

YELLOWSTONE LAKE

131.7 square miles of surface area

141 miles of shoreline

20 miles north to south

14 miles east to west

Average depth: 140 feet

Maximum depth: 410 feet

WILDLIFE

61 species of mammals, including:
7 species of native ungulates
2 species of bears

322 recorded species of birds (148 nesting species)

16 species of fish (5 non-native)

6 species of reptiles

4 species of amphibians

3 threatened species: bald eagle, lynx, grizzly bear (may be delisted in 2007)

2 endangered species: whooping crane (currently absent), gray wolf (designated an experimental and non-essential population in Yellowstone National Park)

FLORA

7 species of conifers

Approximately 80% of forest is comprised of lodgepole pine

Approximately 1,098 species of native vascular plants

More than 199 species of exotic (non-native) plants

186 species of lichens

At least 406 species of thermophiles (only 1% of hydrothermal areas inventoried)

CULTURAL RESOURCES

Approximately 1,500 archeological sites

More than 300 ethnographic resources (animals, plants, sites)

26 associated Native American tribes

More than 2 dozen sites, landmarks, and districts listed on the National Register of Historic Places

1 National Historic Trail

More than 900 historic buildings

More than 379,000 cultural objects and natural science specimens

Thousands of books (many rare), manuscripts, periodicals

90,000 historic photographs

VISITATION

2006: 2,870,293 entries to the park

2006–2007 winter: 297,718 entries

Record year: 1992—3,144,405 entries

FACILITIES

9 visitor centers, museums, and contact stations

9 hotels/lodges (2,000+ hotel rooms/cabins)

7 NPS-operated campgrounds (450+ sites)

5 concession-operated campgrounds (1,700+ sites)

More than 1,500 buildings (NPS and concessions)

52 picnic areas

1 marina

13 self-guiding trails

ROADS AND TRAILS

5 park entrances

466 miles of roads (310 paved/primary miles)

More than 15 miles of boardwalk

Approximately 1,000 miles of backcountry trails

92 trailheads

301 backcountry campsites

EMPLOYEES

Approximately 800 people work for the National Park Service at peak summer levels; about 400 year-round

Approximately 3,500 people work for concessioners at peak summer levels

* ***About park square mileage and acreage:*** *No area figures for the park have been scientifically verified. The figures used here have been used for many years and in different references. They differ from the park's master deed, which also contains unverified figures. Efforts to confirm the total park area continue.*

Park Facts

World's first national park

A designated World Heritage Site and Biosphere Reserve

* *3,472 square miles or 8,987 square km*

* *2,221,766 acres or 899,139 hectares*

63 air miles north to south (102 km)

54 air miles east to west (87 km)

96% in Wyoming, 3% in Montana, 1% in Idaho

Highest Point: 11,358 ft. (Eagle Peak)

Lowest Point: 5,282 ft. (Reese Creek)

Larger than the states of Rhode Island & Delaware combined

Approximately 5% of park is covered by water; 15% is grassland; and 80% is forested

Precipitation ranges from 10 inches (26 cm) at the north boundary to 80 inches (205 cm) in the southwest corner

Temperatures
Average at Mammoth Hot Springs:
January: 9ºF
July: 80ºF
Records:
High: 99ºF (Mammoth, 2002)
Low: –66ºF (West Entrance, Riverside Station, 1933)

Frequently Asked Questions: General

How did Yellowstone get its name?

When French-Canadian trappers encountered the Minnetaree tribe along this river in what is today eastern Montana, they asked about the name of the river. The Minnetaree responded "Mi tse a-da-zi," which translates as "Rock Yellow River." (Historians do not know why the Minnetaree gave this name to the river.) The trappers translated this into French—"Roche Jaune" or "Pierre Jaune." In 1797, explorer-geographer David Thomson used the English version—"Yellow Stone." Lewis and Clark called the Yellowstone River by the French and English forms. Subsequent usage formalized the name as "Yellowstone."

Did other national parks exist before Yellowstone?

Some sources list Hot Springs in Arkansas as the first national park—it was set aside in 1832, forty years before Yellowstone was established—but it was actually the nation's oldest national *reservation,* set aside to preserve and distribute a utilitarian resource (hot water), much like our present national forests. In 1921, an act of Congress established Hot Springs as a national park.

Other sources argue Yosemite was the first national park, but it was actually a state park. In 1864, Congress set aside the area surrounding the Yosemite Valley and the Mariposa Grove of Big Trees and gave them to the state of California to administer for public use and recreation. In 1890, Congress established Yosemite as a national park 18 years after it established Yellowstone National Park.

Is Yellowstone the largest national park?

No. More than half of Alaska's national park units are larger, including Wrangell–St. Elias National Park and Preserve, which is the largest unit in the National Park System (13 million acres). Until 1994, Yellowstone (at 2.2 million acres) was the largest national park in the contiguous states. That year Death Valley National Monument was expanded and became a national park—it has more than 3 million acres.

Does Yellowstone include a federally designated wilderness?

No. Most of the park was recommended for this designation in 1972, but Congress has not acted on the recommendation. *See Chapter 9, "Wilderness."*

Is Yellowstone the most visited national park?

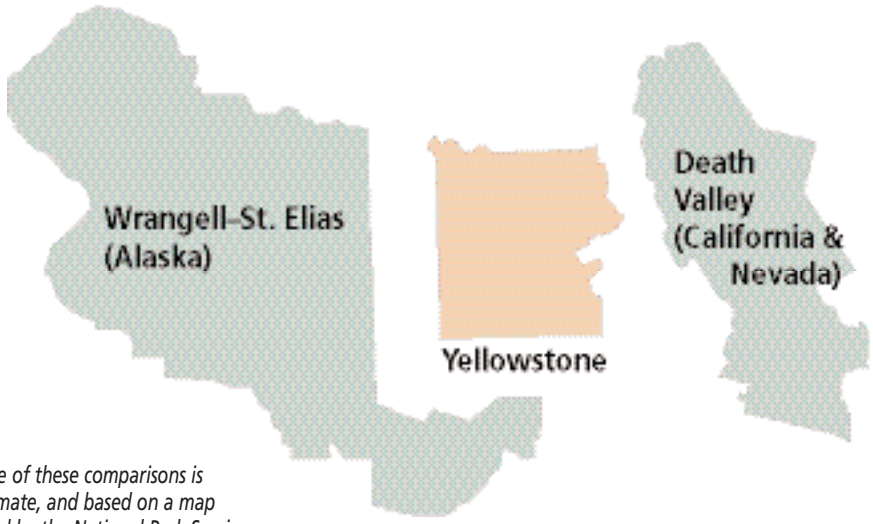
No. It's the fifth most visited. Great Smoky Mountains National Park has the most visitors —more than 9 million.

How many rangers work in Yellowstone?

Approximately 180 rangers work in the park during the peak summer season; less than 100 year-round. Park rangers perform duties in interpretation, education, resource management, law enforcement, emergency medical services, and backcountry operations. Many other people work in research, maintenance, management, administration, trail maintenance, fire management, and fee collection. In total, approximately 800 people are employed by the National Park Service in Yellowstone (approximately 387 permanent, 500 seasonal).

What is the highest peak in Yellowstone?

Eagle Peak in the southeastern part of the park is the highest at 11,358 ft.



The scale of these comparisons is approximate, and based on a map produced by the National Park Service.

How cold does Yellowstone get in winter?

Average winter highs are 20–30ºF; average lows are 0–9ºF. The record low was –66°F (–54°C) at the Riverside Ranger Station, near the West Entrance, on February 9, 1933.

What is the Continental Divide?

Think of the Continental Divide as the crest of the continent. Theoretically, when precipitation falls on the west side of the Divide, it eventually reaches the Pacific Ocean. When it falls on the east side of the Divide, it eventually reaches the Atlantic Ocean. In Yellowstone (as elsewhere), this ridgeline is not straight. It follows the twists and turns of the mountains through the southwestern part of the park. Therefore, you cross the Continental Divide three times while traveling from the South Entrance to Old Faithful.

Why is Yellowstone called a Biosphere Reserve and a World Heritage Site?

The United Nations designated Yellowstone National Park as a Biosphere Reserve and a World Heritage Site because of the worldwide significance of its natural and cultural resources. These designations have nothing to do with how Yellowstone is managed—the United Nations has no authority to dictate federal land management decisions in the United States—nor do they change the fact that Yellowstone is under the legal authority of the United States of America.

The October 26, 1976, United Nations designation of Yellowstone as a Biosphere Reserve stated: "Yellowstone National Park is recognized as part of the international network of biosphere reserves. This network of protected samples of the world's major ecosystem types is devoted to conservation of nature and scientific research in the service of man. It provides a standard against which the effect of man's impact on the environment can be measured."

The September 8, 1978, United Nations designation of Yellowstone as a World Heritage Site, requested by U.S. President Richard Nixon and Congress, stated: "Through the collective recognition of the community of nations . . . Yellowstone National Park has been designated as a World Heritage Site and joins a select list of protected areas around the world whose outstanding natural and cultural resources form the common inheritance of all mankind."

In 1995, Yellowstone was placed on a list of endangered World Heritage sites in part because of a proposed gold mine outside the Northeast Entrance. In 2003, it was removed from the list because the mine was not going to be opened.

What is the difference between a national park and a national forest?

National parks are administered by the Department of the Interior and national forests by the Department of Agriculture. The National Park Service is mandated to preserve resources unimpaired, while the U.S. Forest Service is mandated to wisely manage resources for a variety of sustainable uses.

Yellowstone National Park is surrounded by six units in the national forest system, shown in the map below.

National Forests of the Greater Yellowstone Ecosystem

Yellowstone is an international Man and the Biosphere site.

www.cr.nps.gov/worldheritage

whc.unesco.org/

www.unesco.org/mab

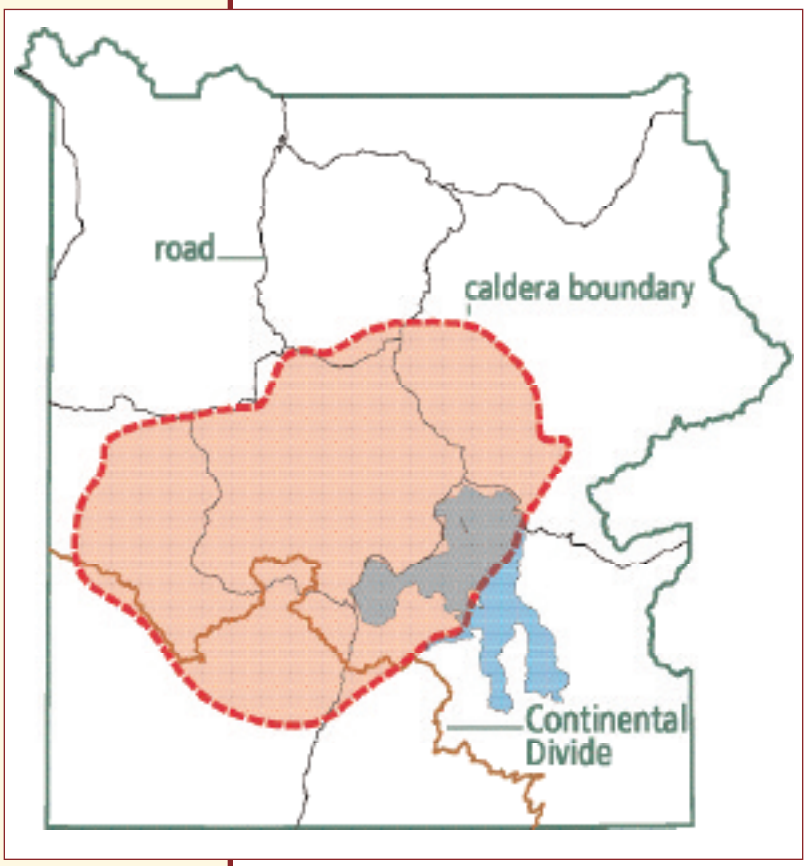
FAQ: Volcanic Geology

Is Yellowstone a volcano?

Yes. Within the past two million years, many volcanic eruptions have occurred in the Yellowstone area—three of them major.

What is the caldera line on the park map?

The caldera line marks the rim of a crater, or caldera, created by a massive volcanic eruption in Yellowstone approximately 640,000 years ago. Subsequent lava flows filled in the crater, and it is now measured at 30 x 45 miles. Its rim can be seen from these areas in the park: Mt. Washburn, Gibbon Falls, Lewis Falls, and Flat Mountain Arm of Yellowstone Lake.



Is Yellowstone's volcano still active?

Yes. The park's vast hydrothermal features attest to the heat still beneath this area. Numerous earthquakes—1,000 to 3,000 per year—also reveal activity below ground. The Yellowstone Volcano Observatory (YVO) monitors an array of signals to track this activity. *(See page 49 for more about YVO.)*

What is a supervolcano?

Some scientists consider Yellowstone to be a "supervolcano," which refers to an eruption of more than 240 cubic miles of magma. Two of Yellowstone's three major eruptions met the criteria. *(See Chapter 3.)*

Will Yellowstone erupt soon?

There is no evidence that a catastrophic eruption is imminent. Current geologic activity at Yellowstone has remained relatively constant since earth scientists first started monitoring some 30 years ago. Though another caldera-forming eruption is theoretically possible, it is very unlikely to occur in the next thousand or even 10,000 years. Scientists have also found no indication of an imminent smaller eruption of lava.

How do scientists know Yellowstone won't erupt?

As mentioned earlier, the Yellowstone Volcanic Observatory has an array of monitors in place throughout the region. These monitors would detect sudden or strong movements or shifts in heat that would indicate increasing activity. No such evidence exists at this time.

In addition, YVO scientists collaborate with scientists from all over the world to study and assess the hazards of the Yellowstone volcano. To learn more about Yellowstone's volcanic past, to view current data about earthquakes, ground movement, and stream flow, visit the YVO website at http://volcanoes.usgs.gov/yvo/.

What is Yellowstone National Park doing to stop or prevent an eruption?

Nothing can be done to prevent an eruption. The temperatures, pressures, physical characteristics of partially molten rock, and immensity of the magma chamber are beyond human ability to impact—much less control.

If Old Faithful Geyser quits erupting, would that be a sign the volcano is about to erupt?

All geysers are highly dynamic, including Old Faithful. We expect Old Faithful to change in response to the ongoing geologic processes associated with mineral deposition and earthquakes. Thus, a change in Old Faithful Geyser will not necessarily indicate a change in volcanic activity.

FAQ: Hydrothermal Geology

Why are geysers in Yellowstone?

Yellowstone's volcanic geology provides the three components for geysers and other hydrothermal features: heat, water, and a natural "plumbing" system. Magma beneath the surface provides the first ingredient: heat. Ample rain and snowfall supply the second ingredient: water. The water seeps several thousand feet (more than a kilometer) below the surface where it is heated. Underground cracks and fissures form the third ingredient: plumbing. Hot water rises through the plumbing to surface as hydrothermal features in Yellowstone. Geysers occur when that plumbing is constricted. *(See Chapter 3.)*

What exactly is a geyser basin?

A geyser basin is a geographically distinct area that contains a "cluster" or array of hydrothermal features that may include geysers, hot springs, mudpots, and fumaroles. These distinct areas often (but not always) occur in topographically low places because hydrothermal features tend to be concentrated around the margins of lava flows and in areas of faulting.

Why can't I bring my dog on geyser basin trails?

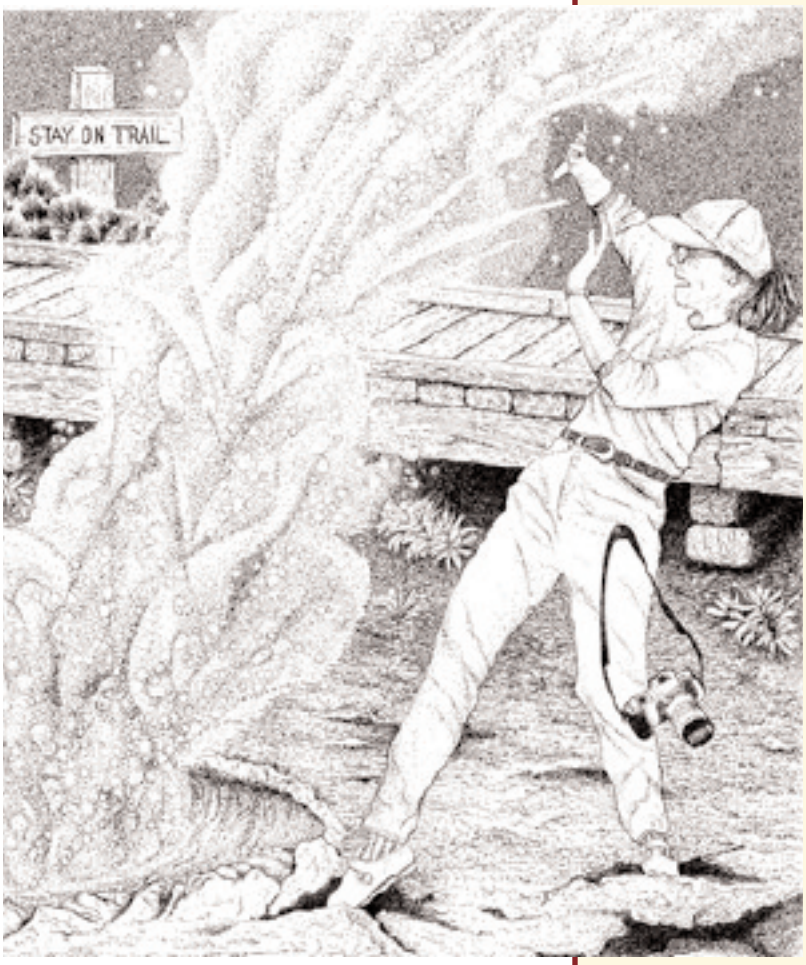
Dogs do not seem to recognize the difference between hot and cold water. Dogs have died diving into hot springs. They also disturb wildlife and are prohibited from all park trails. Pets must be kept on a leash at all times. Ask at a visitor center where you can safely and legally walk a pet.

Is it really dangerous to walk off the boardwalks in geyser basins?

YES! Geyser basins are constantly changing. Boiling water surges just under the thin crust of most geyser basins, and many people have been severely injured (second and third degree burns) when they have broken through the fragile surface. Some people have died from falling into hydrothermal features.

Why can't I smoke in the geyser basins?

Litter of any kind can clog vents, thus altering or destroying hydrothermal activity. Cigarette butts quickly accumulate if smoking is allowed. Also, sulfur deposits exist in these areas, and they easily catch fire, producing dangerous—sometimes lethal—fumes.



Were Native Americans afraid of geysers?

Native Americans in general were not afraid of geysers. The associated tribes of Yellowstone state their people have used the park as a place to live, to collect food and other resources, and as a passage through to the bison hunting grounds of the Great Plains. Archeologists and historians have also uncovered ample evidence that people lived in and visited Yellowstone for thousands of years before historic times. *See chapters 1 and 8 for more about Native Americans in Yellowstone.*

See chapters 2–4 for more information about geology in Yellowstone.

FAQ: Wildlife

Where are the bears?

People who visited Yellowstone prior to the 1970s often remember seeing bears along roadsides and within developed areas of the park. Although observing these habituated bears was very popular with park visitors, it was not good for the people or the bears. (*See Chapter 9.)* In 1970, the park initiated an intensive bear management program to return the grizzly and black bears to feeding on natural food sources and to reduce bear-caused human injuries. Among the measures: garbage cans were bear-proofed and garbage dumps within the park were closed.

Bears are still sometimes seen near roads and they may be viewed occasionally in the wild. Grizzly bears are active primarily at dawn, dusk, and night. In spring, they may be seen around Yellowstone Lake, Fishing Bridge, and the East Entrance due to the trout spawning creeks in these areas. In mid-summer, they are most commonly seen in the meadows between Tower–Roosevelt and Canyon, and in the Lamar Valley. Black bears are most active at dawn and dusk, and sometimes during the middle of the day. Look for black bears in open spaces within or near forested areas. Black bears are most commonly observed between Mammoth, Tower, and the Northeast Entrance.

Are grizzly bears considered threatened or endangered?

The Yellowstone grizzly population was listed as a threatened species in 1975. In 2005, the U.S. Fish and Wildlife Service (USFWS) proposed delisting this population. Depending on legal challenges, the delisting may become official in 2007. Even after delisting is approved, scientists will continue to monitor the long-term recovery goals for grizzly bears.

Where can I see wildlife?

It helps to know the habits and migration patterns of the animals you want to see and the habitats in which they live. For example, bighorn sheep are adapted to live on steep terrain; so you might see them on cliffs in the Tower area. Osprey eat fish, so you would expect to see them along rivers. *Yellowstone Today,* the park's newspaper, provides general guidelines for wildlife watching and information about the park's wolves. Rangers at the visitor centers can also provide local details. Reference lists at the end of chapters 7 & 9 provide further sources of information about Yellowstone's wildlife. You'll find more on the park's official website, www.nps.gov/yell.

What is the difference between a bison and a buffalo?

None. In North America, both terms refer to the American bison; the scientific name is *Bison bison.* Early European explorers called this animal by many names. Historians believe that the term "buffalo" grew from the French word for beef, "boeuf." Some people insist that the term "buffalo" is incorrect because the "true" buffalo exist on other continents and are only distant relatives. However, "buffalo" is used for less formal, everyday use; "bison" is preferred for scientific use. In this book, we use "bison."

Why is fishing lead-free in Yellowstone?

Scientific evidence continues to mount regarding the dangers of lead concentrations in aquatic environments. Birds, such as loons, waterfowl, cranes, and shorebirds, are vulnerable to lead poisoning. Of particular concern in Yellowstone are the alarmingly low populations of trumpeter swans and loons. We strive to maintain viable breeding populations of these sensitive birds. While we can do little about natural hazards, we can minimize the effects of lead on these species. Yellowstone National Park bans most lead tackle. (Terminal tackle must be lead-free; sinkers used to fish for deep-dwelling lake trout are permissible because they are too large to be ingested.)

New question

See Chapter 7 for more information about wildlife in Yellowstone, and Chapter 9 for more about issues involving wildlife.

Drawing © Zachary Zdinak

FAQ: Fires of 1988

How much of the park burned in 1988?

The 1988 fires affected 793,880 acres or 36 percent of the park. Most of these acres sustained ground surface burns. Five fires burned into the park that year from adjacent public lands, including the largest, the North Fork fire. It started accidentally and burned more than 410,000 acres.

Could the fires have been predicted? How were weather conditions different than in previous years?

Yellowstone usually experiences afternoon showers three or four days each week during the summer, but in 1988 no rain fell for almost three months. The most severe drought in the park's recorded history occurred that summer. Also, a large number of lightning strikes came with a series of dry storm fronts. This lightning started many of the fires and storm fronts stoked them with particularly high and sustained winds.

Could the fires have been put out?

It is possible that the few fires that started in early June might have been extinguished. However, between 1972 and 1987, the average fire had gone out naturally after burning only one acre. So, while the early fires were monitored closely and some were contained from going out of the park, the history of fire behavior in Yellowstone, coupled with an abnormally wet spring, suggested these fires would go out as previous fires had. After July 15, all fires were fought aggressively from the moment they were detected. Despite the largest firefighting effort in the history of the nation, weather finally contained the fires when snow fell in September.

Did Yellowstone's fire management policy change after the fires of 1988?

After 1988, the fire policy underwent extensive review and a revised Fire Management Plan was implemented in 1992. As before, fires that threaten life and property and fires that are human-caused will be suppressed immediately. Plus, even naturally ignited (lightning-caused) fires may be put out if they do not meet all the criteria to be allowed to burn. The National Fire Plan 2000 was implemented late in 2000 in response to the extensive fire season that summer. *(See Chapter 6.)*

How does fire benefit Yellowstone?

Fires are a natural part of the Northern Rockies ecosystem. Vegetation in the Greater Yellowstone Ecosystem has adapted to fire and in some cases may be dependent on it. Fire promotes habitat diversity by removing the forest overstory, allowing different plant communities to become established, and preventing trees from becoming established in grassland. Fire increases the rate that nutrients become available to plants by rapidly releasing them from wood and forest litter and by hastening the weathering of soil minerals. This is especially important in a cold and dry climate like Yellowstone's, where decomposition rates are slower than in more hot and humid areas.

In addition, the fires of 1988 provided a rare natural laboratory for scientists to study the effects of fire on an ecosystem.

Why doesn't the park remove burned trees?

Burned trees and those that have died for other reasons still contribute to the ecosystem. For example, dead standing trees provide nesting cavities for many types of animals; fallen trees provide food and shelter for animals and nutrients for the soil.

New question

See Chapter 6 for more information about fire ecology, management, and the fires of 1988.